

FIG. 1

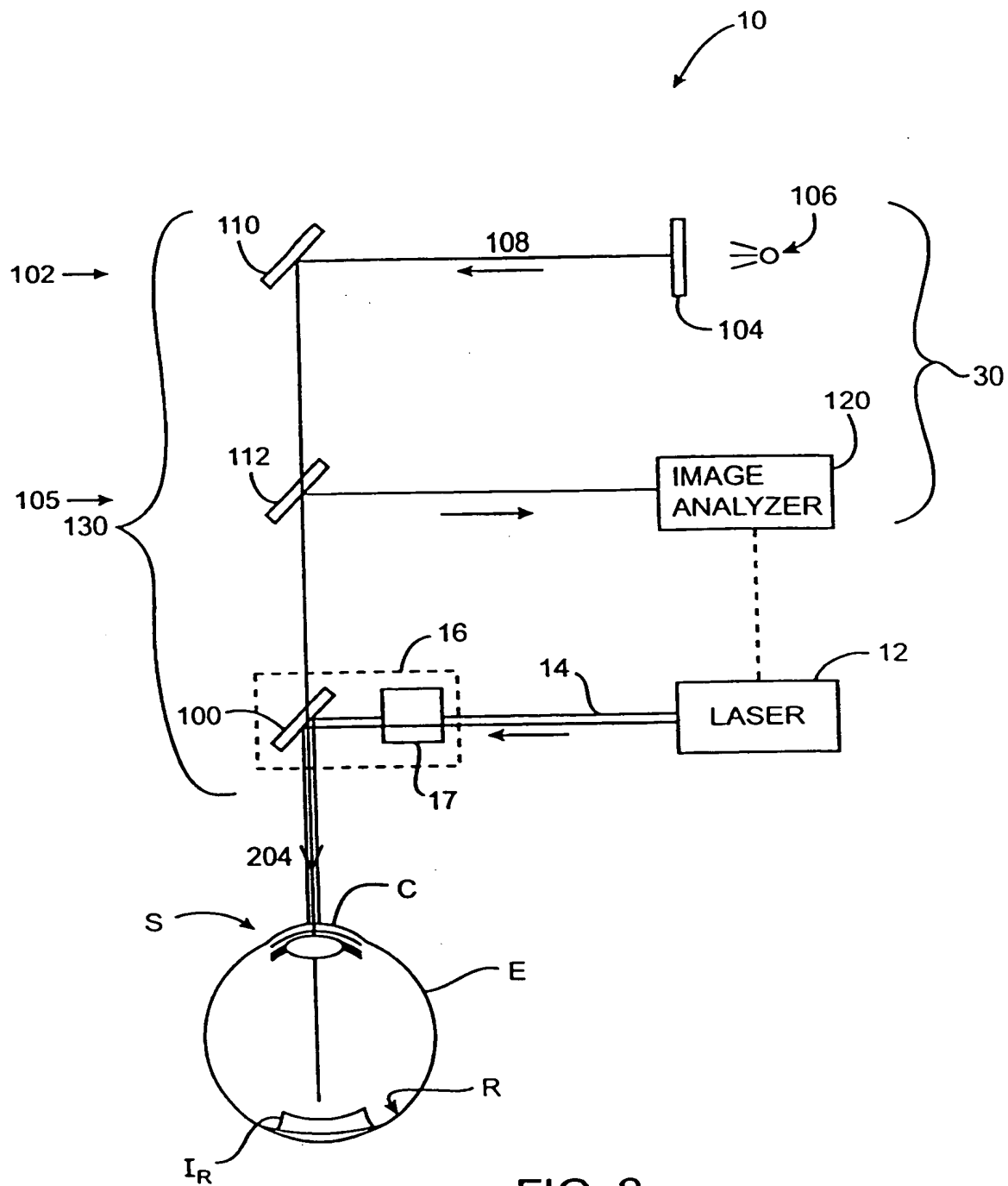
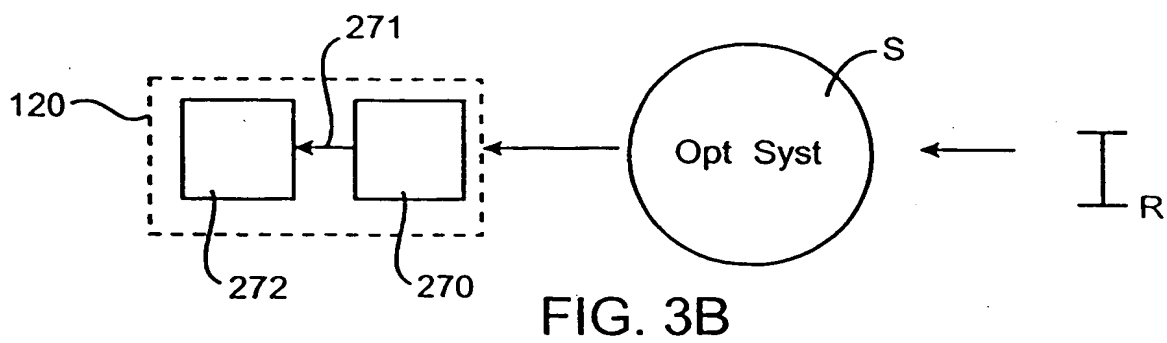
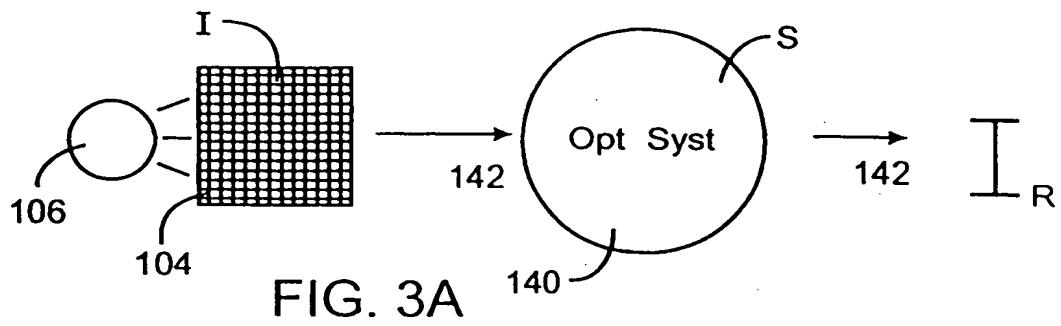


FIG. 2



Refraction by Zernike decomposition

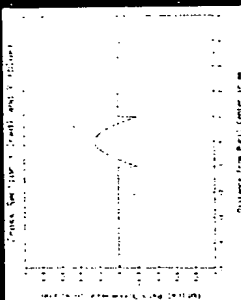
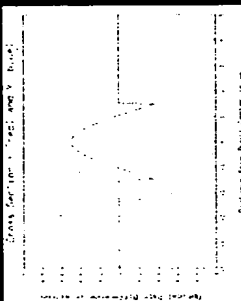
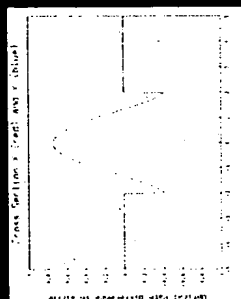
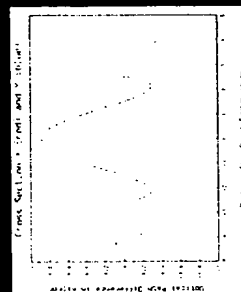
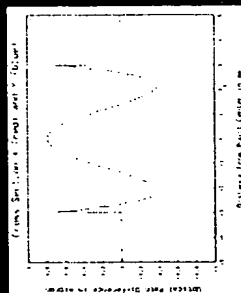
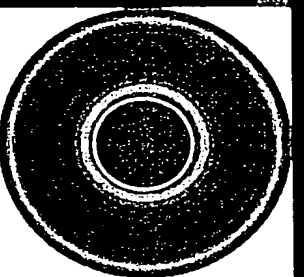
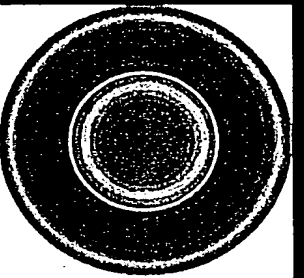
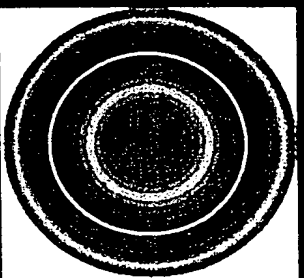
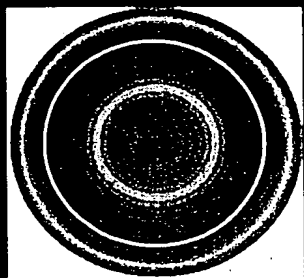
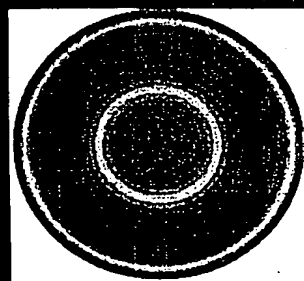
6 mm

5 mm

4mm

3mm

2mm



0.35Z12 0D

0.25Z12 0D

+0.32 D

+0.23D

+0.58 D

+0.41D

+0.78D

+0.56D

+0.93 D

+0.66D

FIG. 4

Strehl Ratio Through Focus

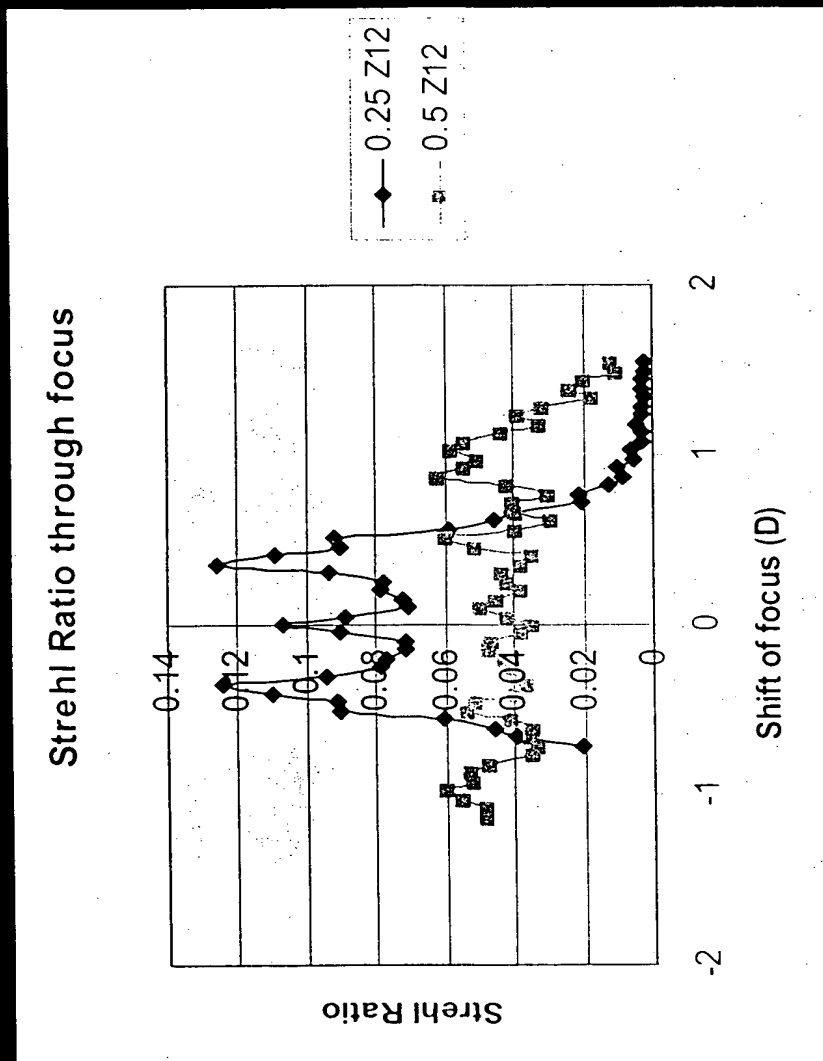
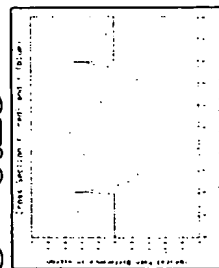
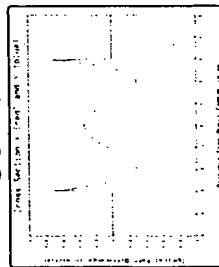
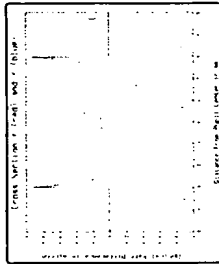
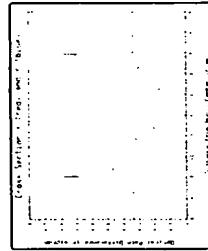
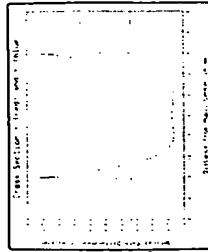


FIG. 5

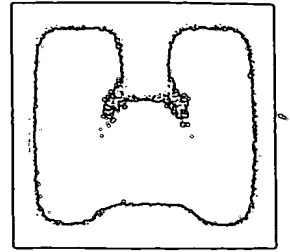
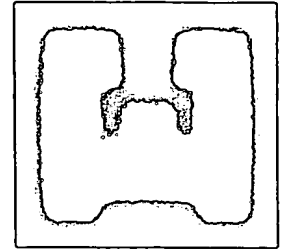
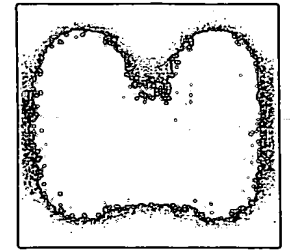
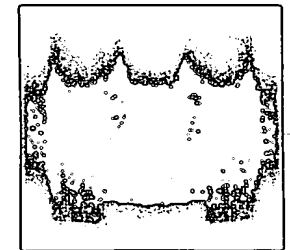
FIG. 6 - Image Quality through focus:

SRC 0 0.1D 0.2D 0.4D 0.6D
RMS 0.25 0.28 0.36 0.573 0.813



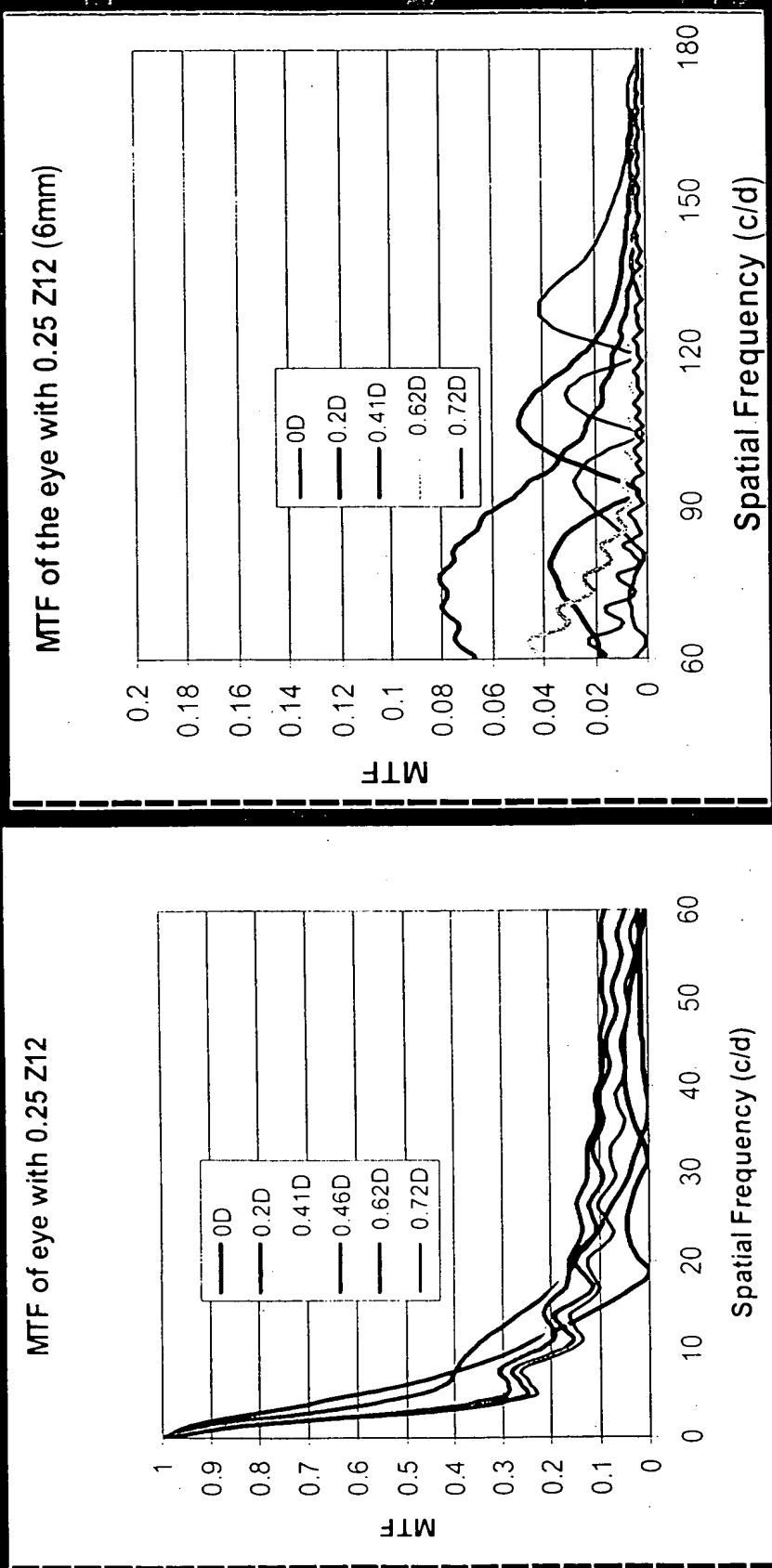
6 arcmin

SR 0.107 0.071 0.078 0.109 0.046



20/20
letter

MTF through focus for 0.25 Z12



- Best image quality for highest MTF within 60 c/deg.
- FIG. 7

FIG. 8 - MTF through focus for a truncated WF of 0.25Z12

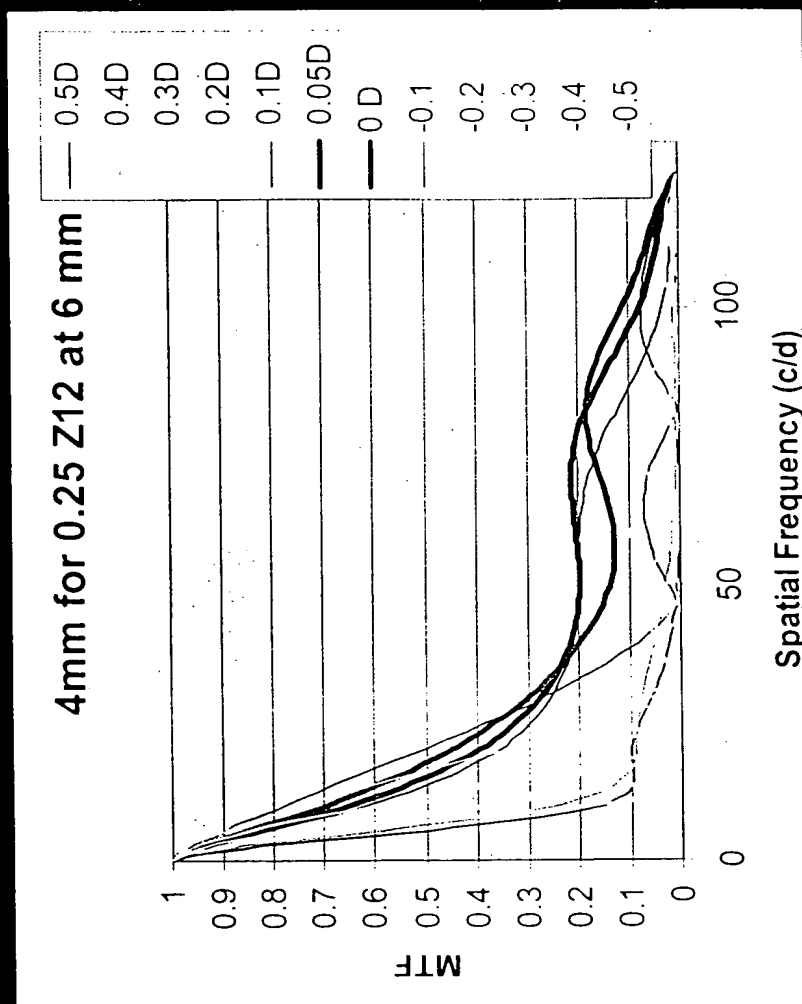
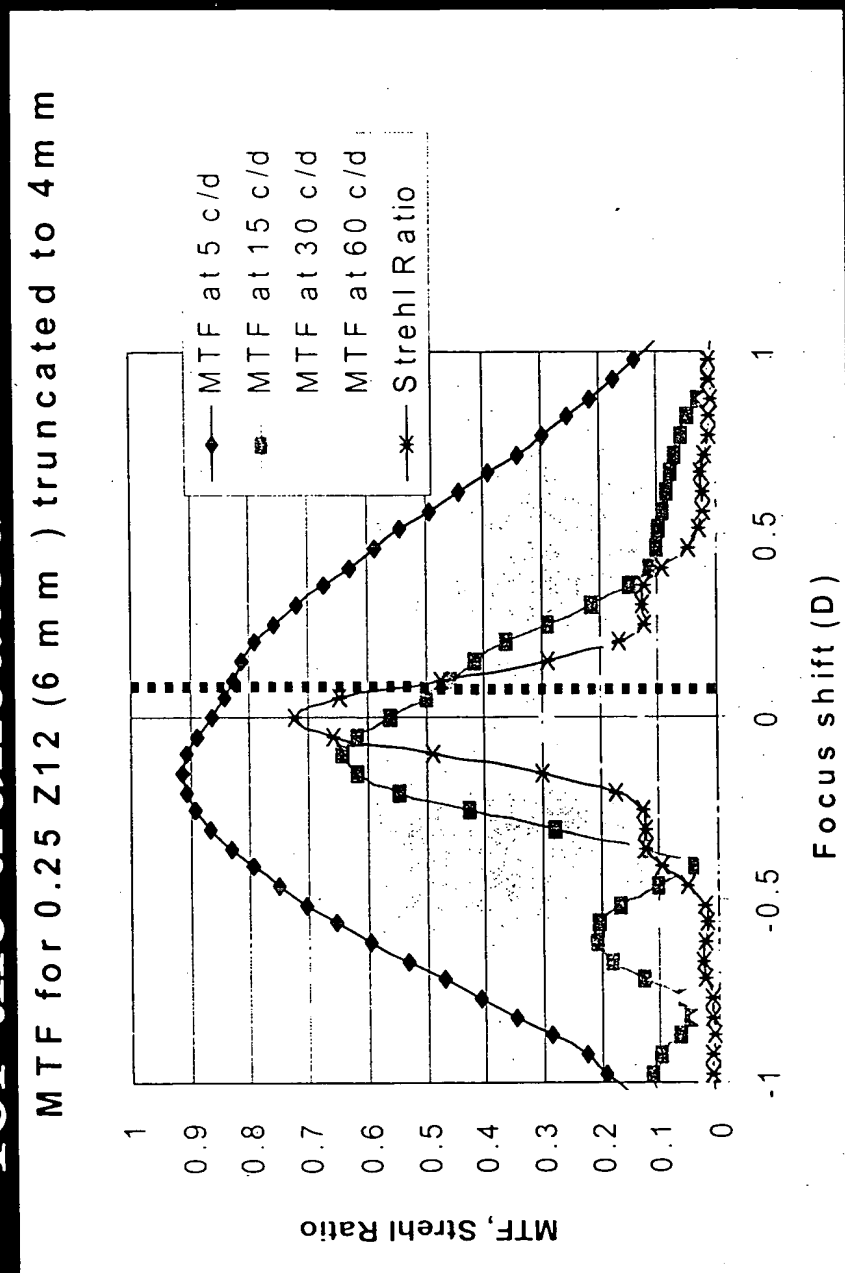


FIG. 9 - Best refraction correction for the truncated wavefront



- For 0.25 Z12 at a 6 mm pupil and truncated to a 4 mm pupil, best focus shift is at 0.05D, which is very close to zero according to a 4mm decomposition.

FIG. 10 - One focus works for both 4mm and 6 mm pupil acuity

test.

	Pupil size	spherical aberration	focus	focus shift net focus
0.25 Z12	6.00	3.35 ρ^4 up to 6mm pupil	-0.74	0.46 -0.28
0.049 Z12	4.00	3.35 ρ^4 up to 4 mm pupil	-0.34	0.05 -0.29

FIG. 11 - Consistent results for
different amounts of spherical
aberration

c12 (6mm)	6 mm fit	4 mm fit	highest MTF at 60 c/d for a 6 mm pupil	highest MTF at 60 c/d for a 4 mm pupil	difference
-0.7	2.09	0.92	0.59	0.52	0.07
-0.5	1.49	0.66	0.49	0.41	0.08
-0.25	0.745	0.335	0.285	0.285	0
0	0	0	0	0	0
0.25	-0.745	-0.335	-0.285	-0.285	0
0.5	-1.49	-0.66	-0.49	-0.41	-0.08
0.75	-2.09	-0.92	-0.59	-0.42	-0.17